SA-VE322/VE325/WMS325/ SS-CN325/V325

SERVICE MANUAL

Ver 1.2 2002.07

SA-WMS325 SS-V325 SS-CN325

US Model
Canadian Model
E Model
Australian Model
Chinese Model
SA-VE325/WMS325
SS-CN325/V325
AEP Model
UK Model
SA-VE322/VE325/WMS325
SS-CN325/V325

- SA-VE322/VE325 consists of the following models respectively.

	SA-VE322	SA-VE325
Active Subwoofer (SA-WMS325)	○	○
Center Speaker (SS-CN325)	–	○
Front and Rear Speakers (SS-V325)	○	○

SPECIFICATIONS

SS-V325 (front and rear speakers)

Speaker system	Full range, magnetically shielded
Speaker units	5.5 × 11 cm ($^{7}/_{32}$ × $^{7}/_{16}$ in.), cone type
Enclosure type	Bass reflex
Rated impedance	8 ohms
Power handling capacity	
Maximum input power:	100 watts
Sensitivity level	87 dB (1 W, 1 m)
Frequency range	90 Hz - 20,000 Hz
Dimensions (w/h/d)	Approx. 70 × 152 × 126 mm (2 $^{7}/_{8}$ × 6 × 5 in.), including front grille
Mass	Approx. 830 g (18 lb 5 oz) each

SS-CN325 (center speaker)

Speaker system	Full range × 2, magnetically shielded
Speaker units	5.5 × 11 cm ($^{7}/_{32}$ × $^{7}/_{16}$ in.), cone type
Enclosure type	Bass reflex
Rated impedance	8 ohms
Power handling capacity	
Maximum input power:	120 watts
Sensitivity level	89 dB (1 W, 1 m)
Frequency range	90 Hz - 20,000 Hz
Dimensions (w/h/d)	Approx. 300 78 126 mm (11 $^{7}/_{8}$ × 3 $^{1}/_{8}$ × 5 in.), including front grille
Mass	Approx. 1600 g (35 lb 4 oz)

SA-WMS325 (subwoofer)

Speaker system	Active subwoofer, magnetically shielded
Speaker unit	Woofer: 16 cm (6 $^{3}/_{8}$ in.), cone type
Enclosure type	Advanced SAW type
Reproduction frequency range	28 Hz - 200 Hz
Amplifier section	
Continuous RMS power output	75 W (8 ohms, 20 Hz - 20 kHz, 0.8% THD)

Inputs

LINE IN (input pin jack)
SPEAKER IN (input terminals)

Outputs

LINE OUT (output pin jack)
SPEAKER OUT (output terminals)

General

Power requirements	
North American model:	120 V AC, 60 Hz
European model:	220 - 230 V AC, 50/60 Hz
Other models:	110 - 120 V/220-240 V AC, 50/60 Hz
Power consumptions	70 W 1 W (standby mode)
Dimensions (w/h/d)	Approx. 205 × 385 × 389 mm (8 $^{1}/_{8}$ × 15 $^{1}/_{4}$ × 15 $^{3}/_{4}$ in.), including front grille
Mass	Approx. 10.3 kg (22 lb 11 oz)

Supplied accessories

SA-VE325
Foot pads (20)
Audio connecting cord (1)
Speaker connecting cords, 10 m (32 ft 9 $^{3}/_{4}$ in.) (2)
Speaker connecting cords, 3.5 m (11 ft 6 in.) (3)
Speaker connecting cords, 2.5 m (8 ft 2 $^{1}/_{2}$ in.) (2)

SA-VE322
Foot pads (8)
Audio connecting cord (1)
Speaker connecting cords, 3.5 m (11 ft 6 in.) (2)
Speaker connecting cords, 2.5 m (8 ft 2 $^{1}/_{2}$ in.) (2)

Design and specifications are subject to change without notice.

MICRO SATELLITE SYSTEM

9-929-572-13
2002G0500-1
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Sony Corporation
Home Audio Company
Published by Sony Engineering Corporation

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage.
Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes.). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

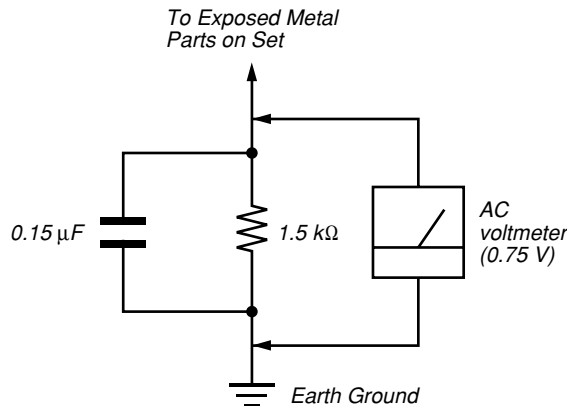


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
DIAGRAMS

1-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Board:

- : Pattern from the side which enables seeing.
- Abbreviation
  AR : Argentina model
  SP : Singapore model

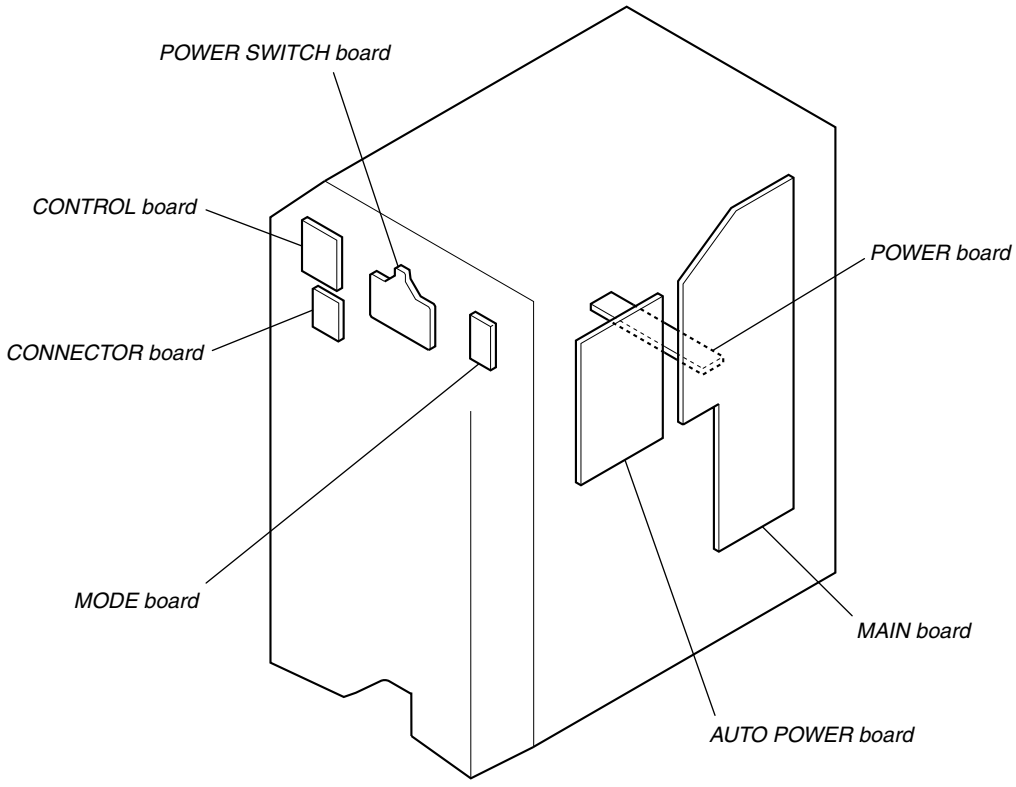
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF
  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- : nonflammable resistor.
- : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

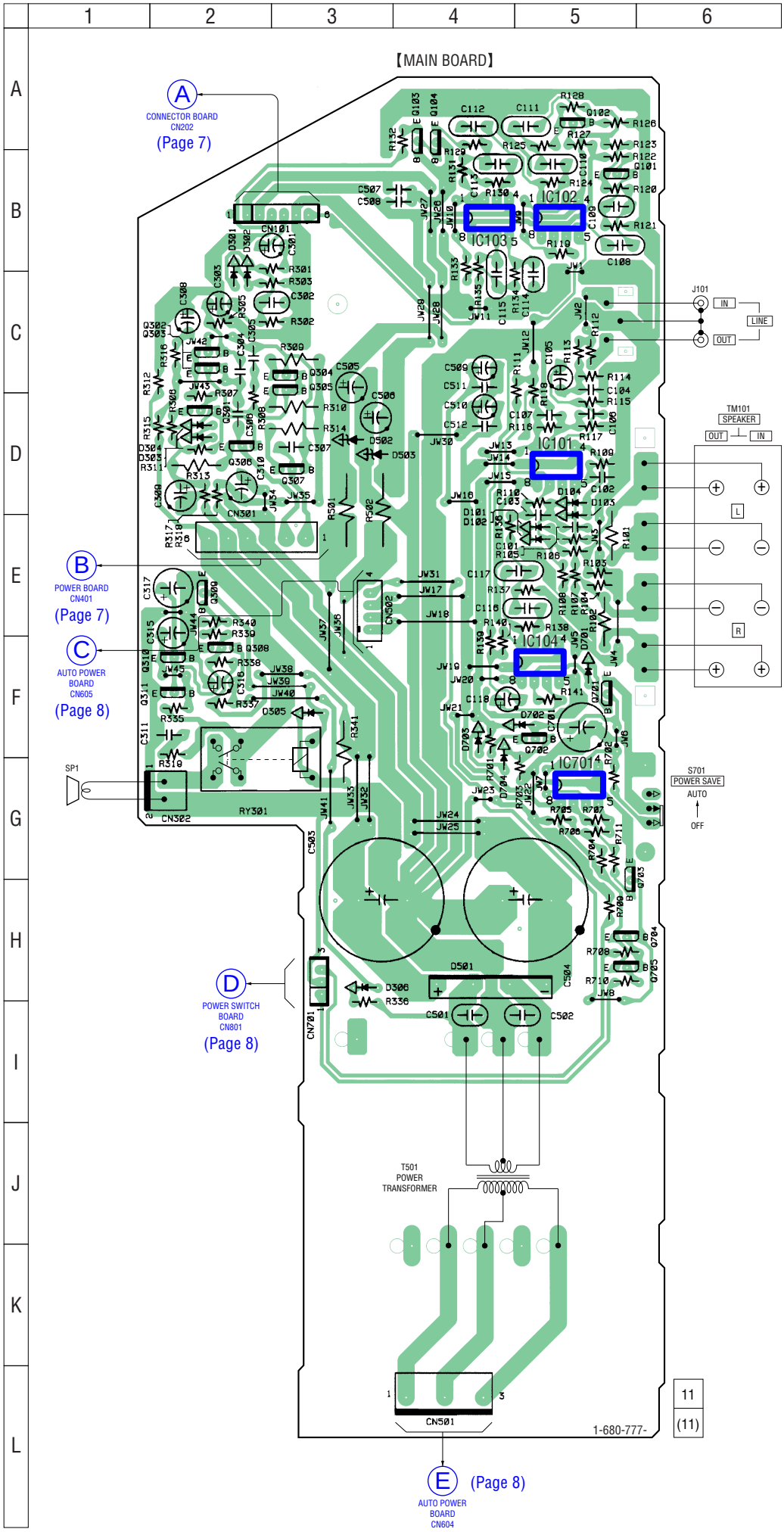
- : B+ Line.
- : B– Line.
- Voltages are dc with respect to ground under no-signal conditions.
- Voltages are dc with respect to ground in service mode.
  no mark : MUSIC MODE
  ( ) : MOVIE MODE
- Voltages are taken with a VOM (Input impedance 10 MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : AUDIO
- Abbreviation
  AR : Argentina model
  AUS : Australian model
  CH : Chinese model
  CND : Canadian model
  MX : Mexican model
  SP : Singapore model

- **Circuit Boards Location**
  (SA-WMS325)



1-2. PRINTED WIRING BOARD – MAIN Section (SA-WMS325) –

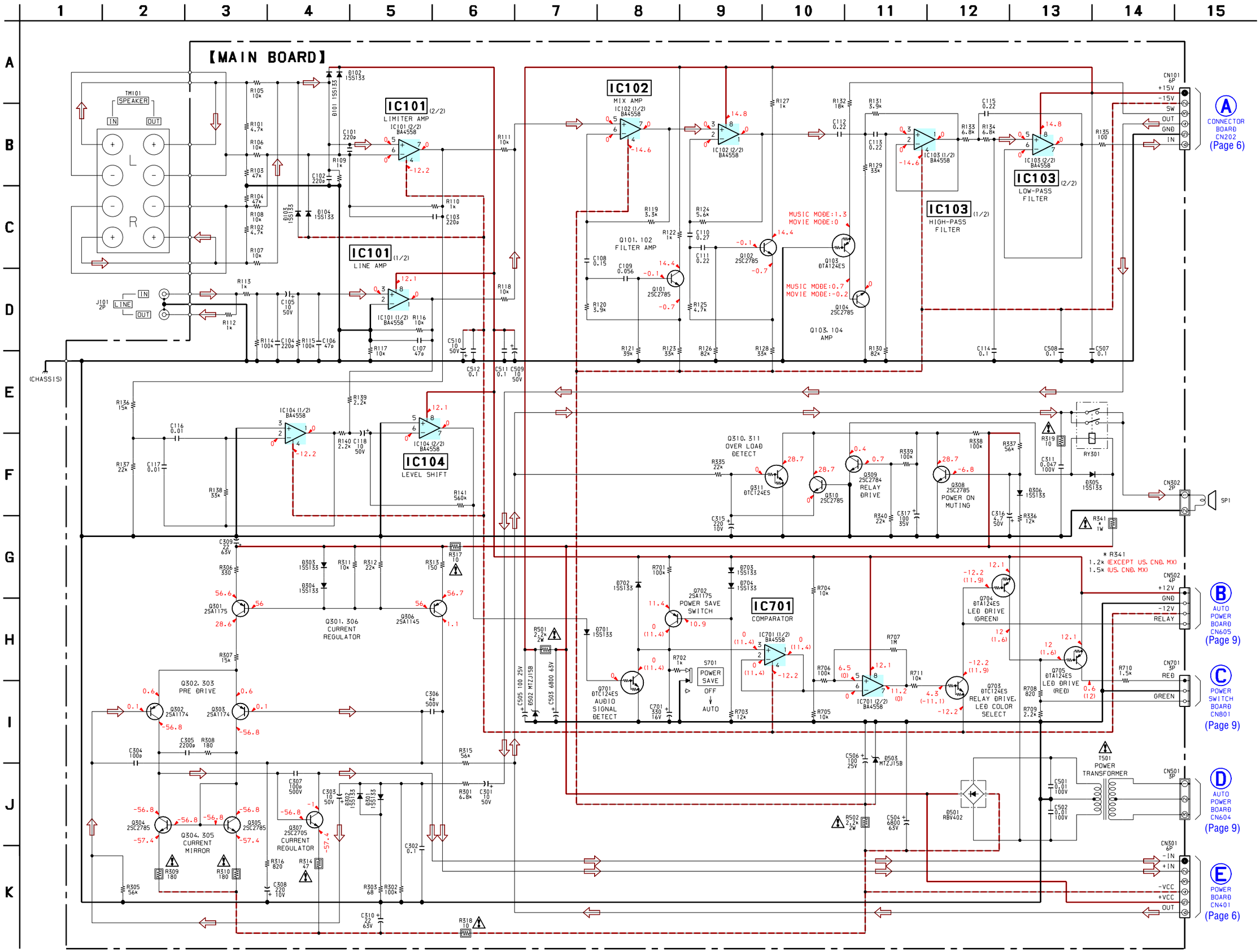
• See page 3 for Circuit Boards Location.



- **Semiconductor Location**

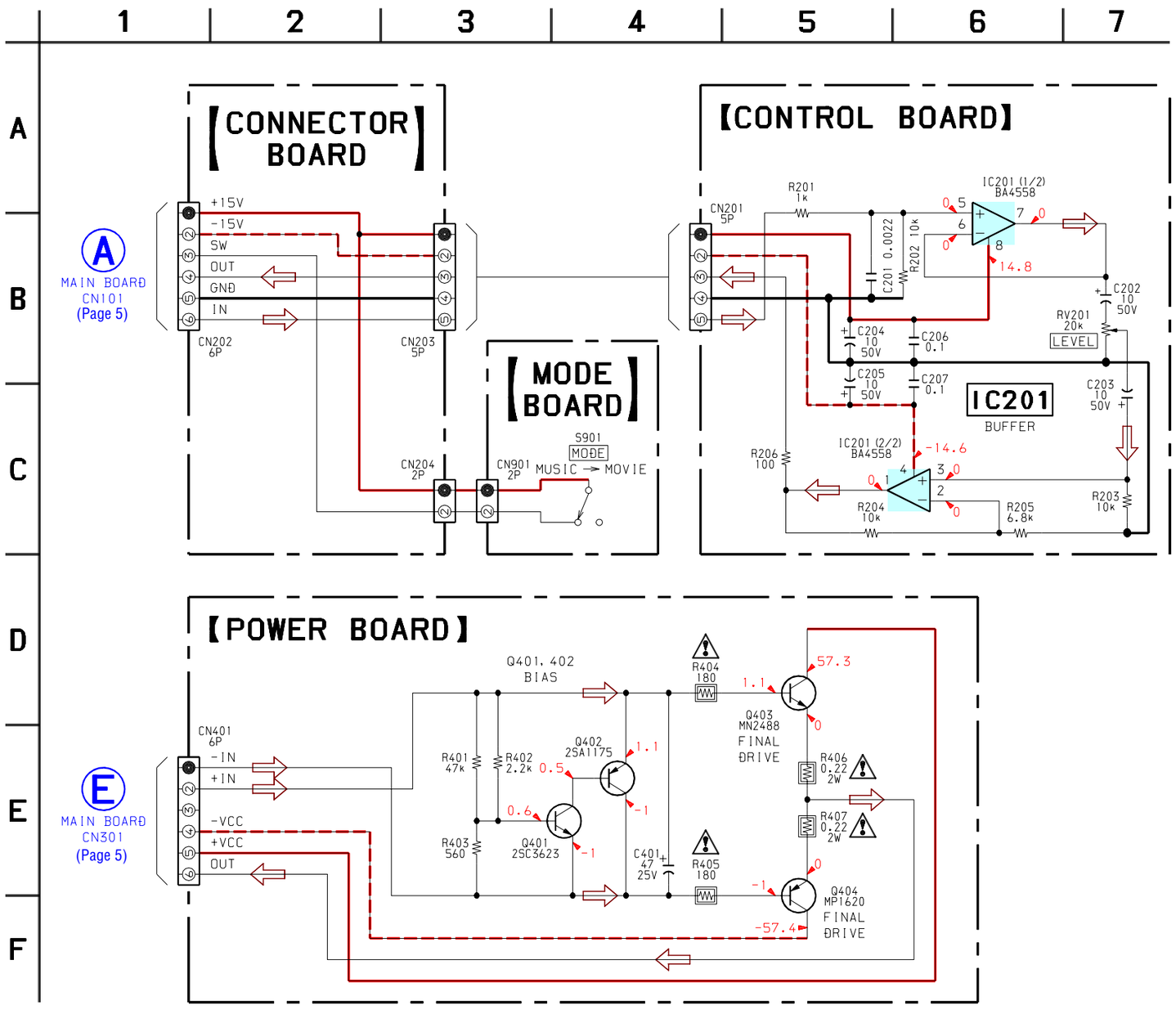
Ref. No.	Location
D101	E-5
D102	E-5
D103	D-5
D104	D-5
D301	B-2
D302	B-2
D303	D-2
D304	D-2
D305	F-4
D306	H-3
D501	H-4
D502	D-3
D503	D-3
D701	F-5
D702	F-5
D703	F-4
D704	G-4
IC101	D-5
IC102	B-5
IC103	B-4
IC104	F-5
IC701	G-5
Q101	B-5
Q102	A-5
Q103	A-4
Q104	A-4
Q301	D-2
Q302	C-2
Q303	C-2
Q304	C-3
Q305	C-3
Q306	D-2
Q307	D-3
Q308	F-2
Q309	E-2
Q310	F-2
Q311	F-2
Q701	F-5
Q702	F-5
Q703	H-5
Q704	H-5
Q705	H-5

1-3. SCHEMATIC DIAGRAM – MAIN Section (SA-WMS325) –


【MAIN BOARD】
IC101 (2/2) LIMITER AMP
IC101 (1/2) LINE AMP
IC102 MIX AMP
IC103 (2/2) LOW-PASS FILTER
IC103 (1/2) HIGH-PASS FILTER
IC104 LEVEL SHIFT
IC701 COMPARATOR
Q101, 102 FILTER AMP
Q103, 104 AMP
Q301, 306 CURRENT REGULATOR
Q302, 303 PRE DRIVE
Q304, 305 CURRENT MIRROR
Q307 2SC2705 CURRENT REGULATOR
Q309 2SC2784 RELAY DRIVE
Q310, 311 OVER LOAD DETECT
Q308 2SC2785 POWER ON MUTING
Q702 2SA1175 POWER SAVE SWITCH
Q701 DTC124ES AUDIO SIGNAL DETECT
Q703 DTC124ES RELAY DRIVE, LED COLOR SELECT
Q704 DTA124ES LED DRIVE (GREEN)
Q705 DTA124ES LED DRIVE (RED)
MUSIC MODE:1.3
MOVIE MODE:0
MUSIC MODE:0.7
MOVIE MODE:-0.2
T501 POWER TRANSFORMER
CN101 6P
CN302 2P
CN502 4P
CN701 3P
CN501 3P
CN301 6P
A CONNECTOR BOARD CN202 (Page 6)
B AUTO POWER BOARD CN605 (Page 9)
C POWER SWITCH BOARD CN801 (Page 9)
D AUTO POWER BOARD CN604 (Page 9)
E POWER BOARD CN401 (Page 6)
* R341 1.2k (EXCEPT US, CND, MX) 1.5k (US, CND, MX)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

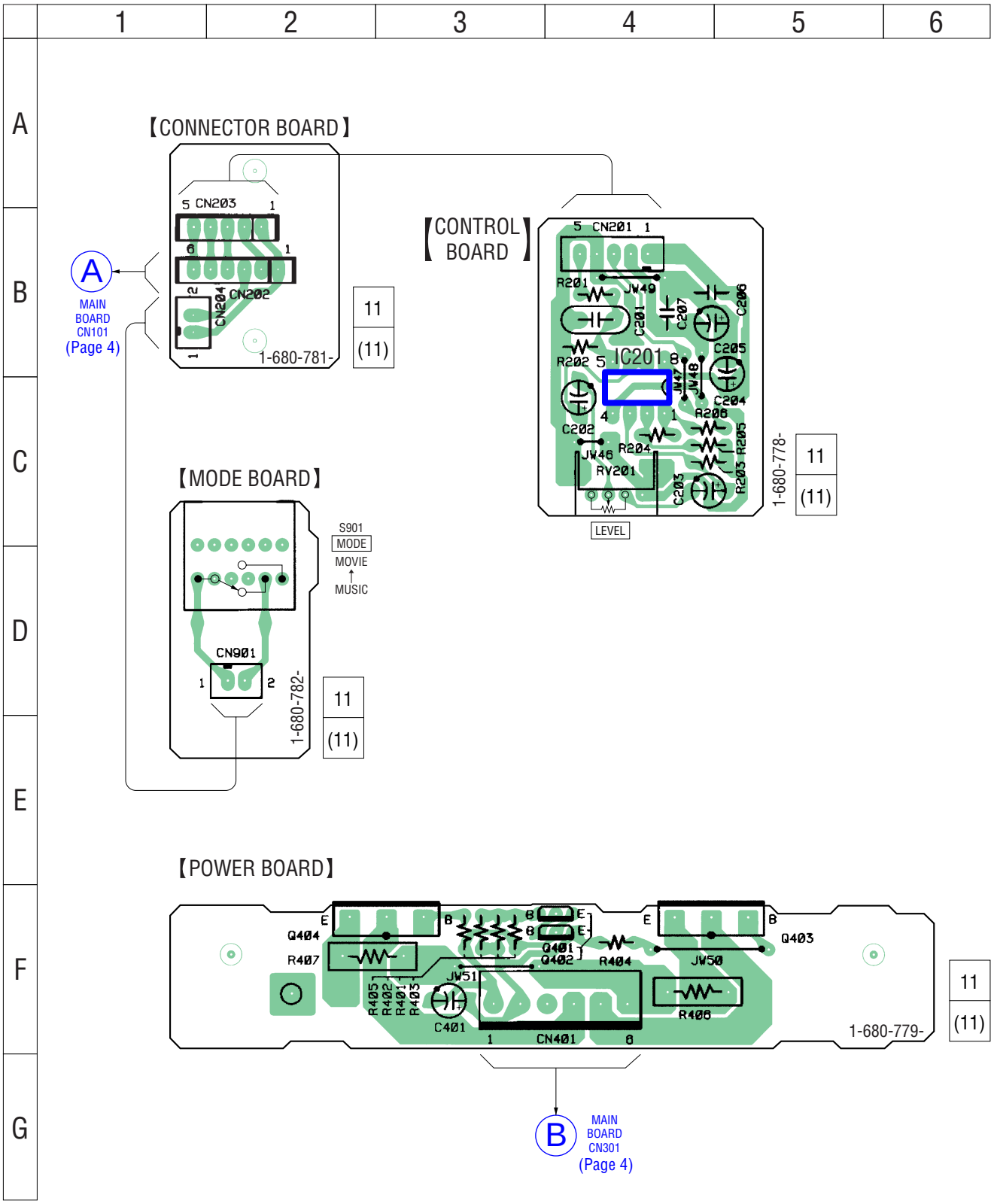
1-4. SCHEMATIC DIAGRAM – CONTROL Section (SA-WMS325) –



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

1-5. PRINTED WIRING BOARDS – CONTROL Section (SA-WMS325) –

• See page 3 for Circuit Boards Location.

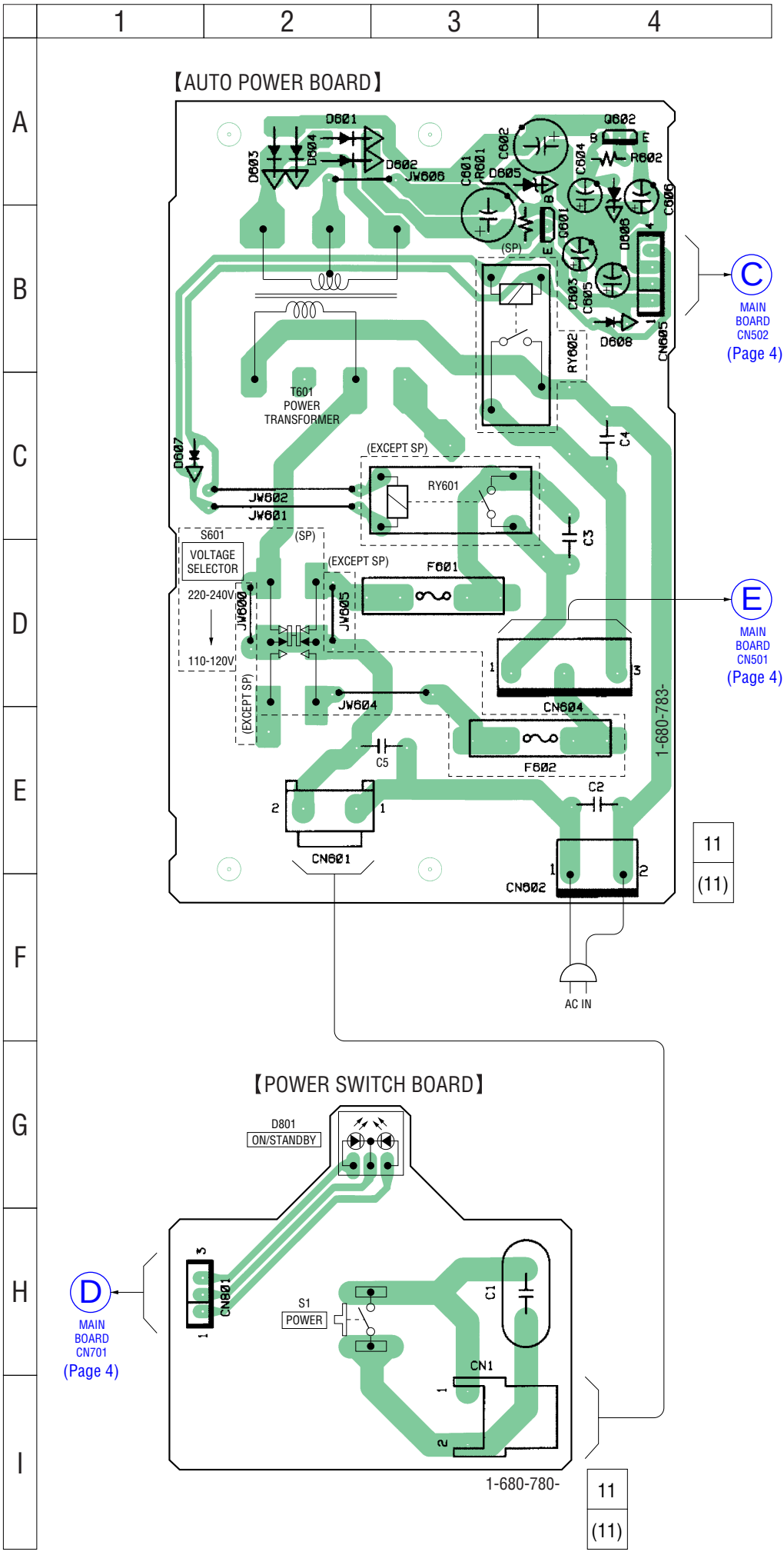


• **Semiconductor Location**

Ref. No.	Location
IC201	B-5
Q401	F-4
Q402	F-4
Q403	F-2
Q404	F-5

1-6. PRINTED WIRING BOARDS – POWER Section (SA-WMS325) –

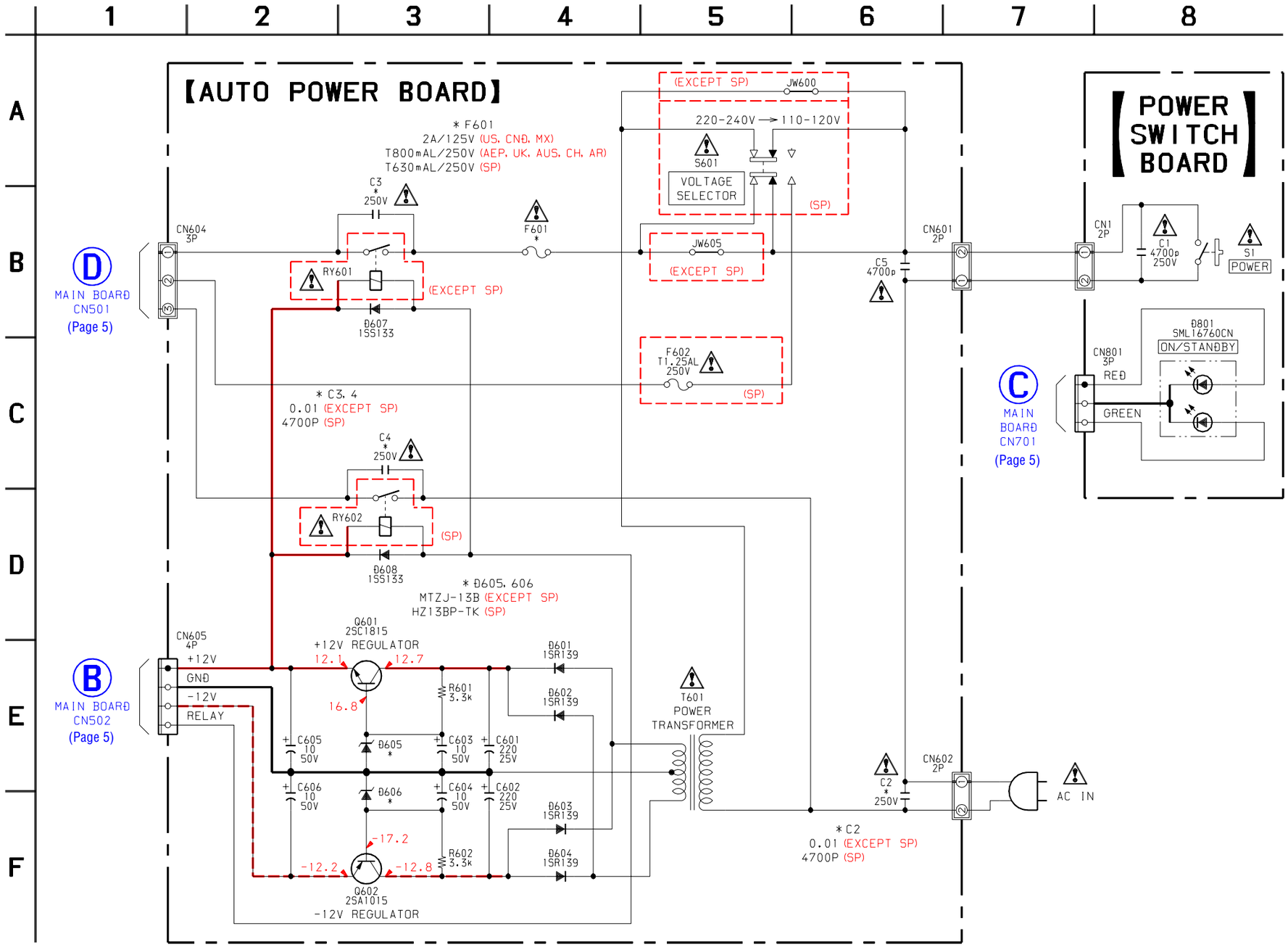
• See page 3 for Circuit Boards Location.



- **Semiconductor Location**

Ref. No.	Location
D601	A-2
D602	A-2
D603	A-2
D604	A-2
D605	A-3
D606	A-4
D607	C-1
D608	B-4
D801	G-2
Q601	B-4
Q602	A-4

1-7. SCHEMATIC DIAGRAM – POWER Section (SA-WMS325) –



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SECTION 2
EXPLODED VIEWS

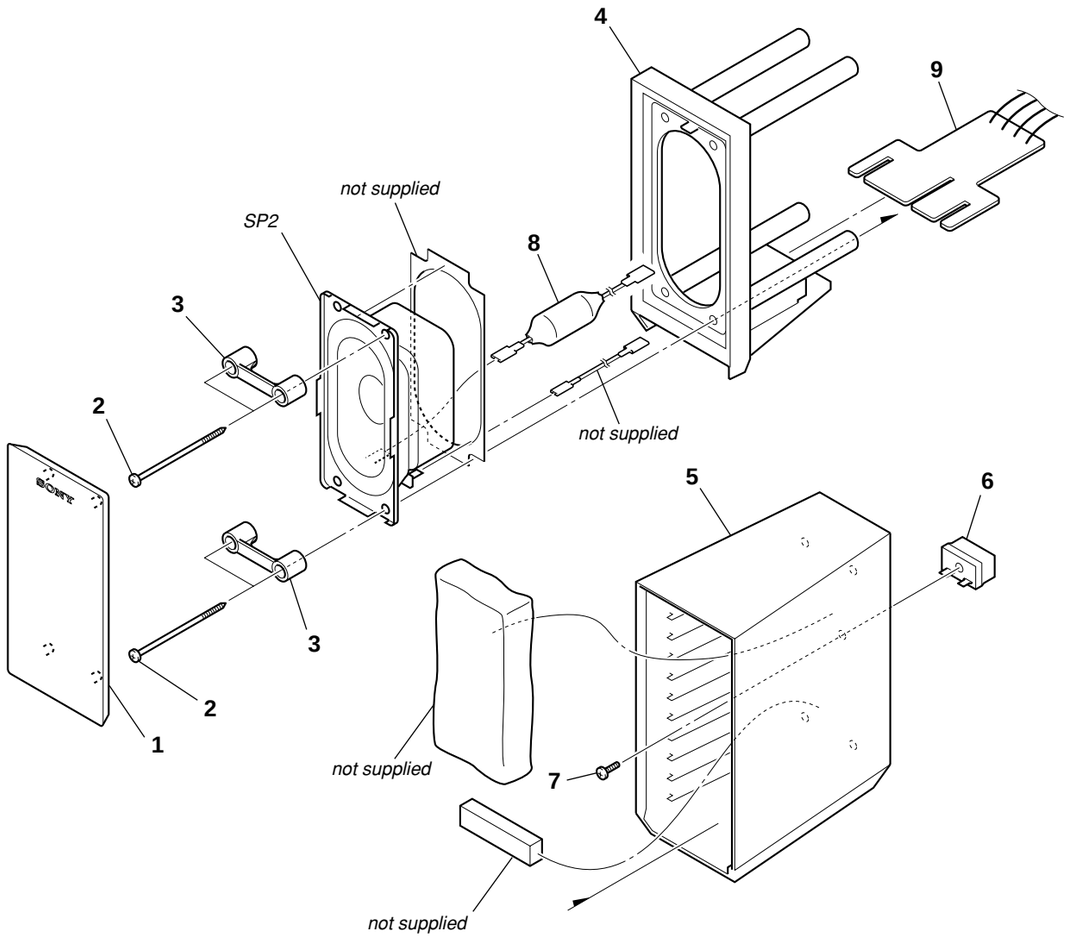
NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Abbreviation
  AR : Argentina model
  AUS : Australian model
  CH : Chinese model
  CND : Canadian model
  MX : Mexican model
  SP : Singapore model

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

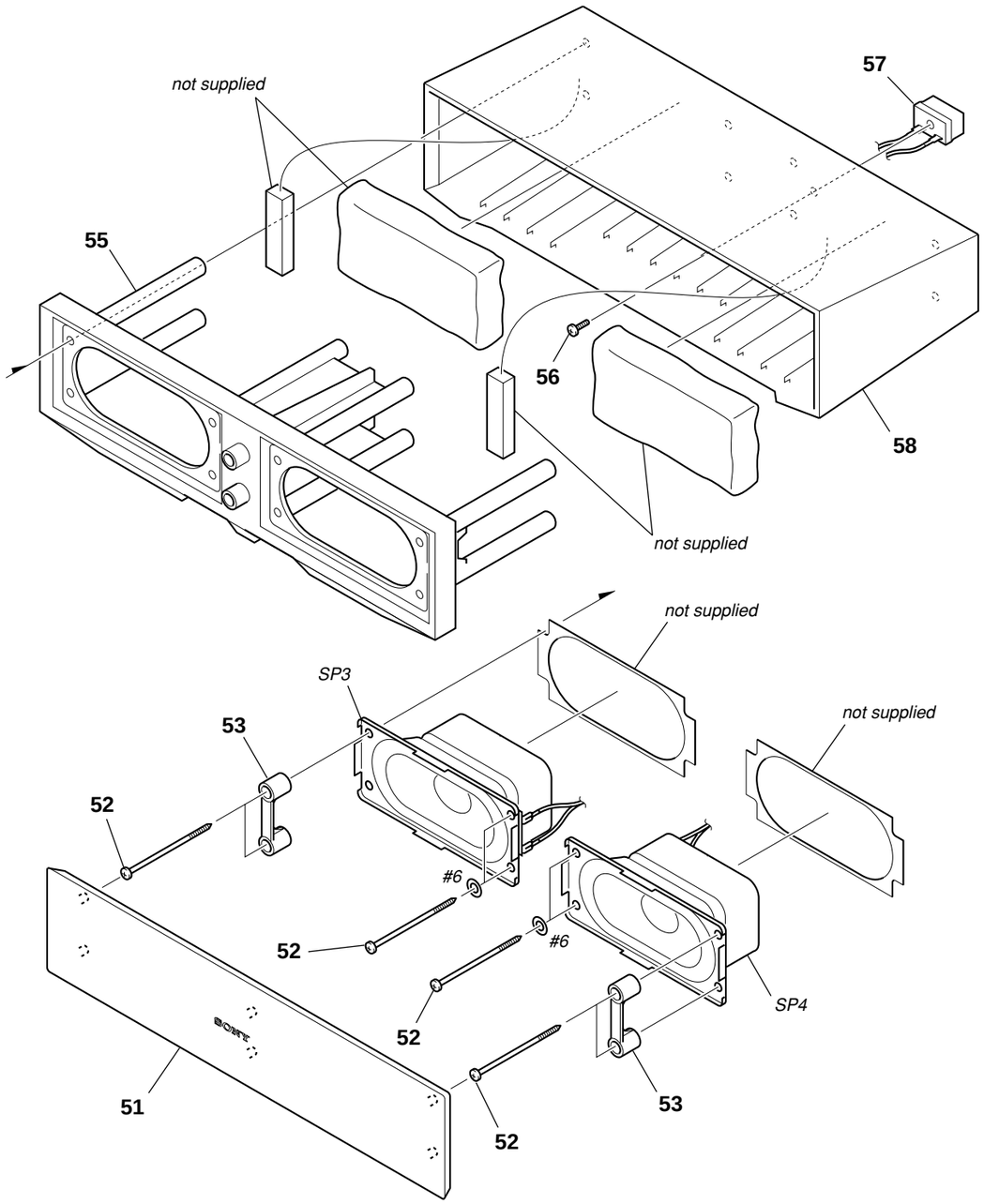
Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

2-1. SS-V325



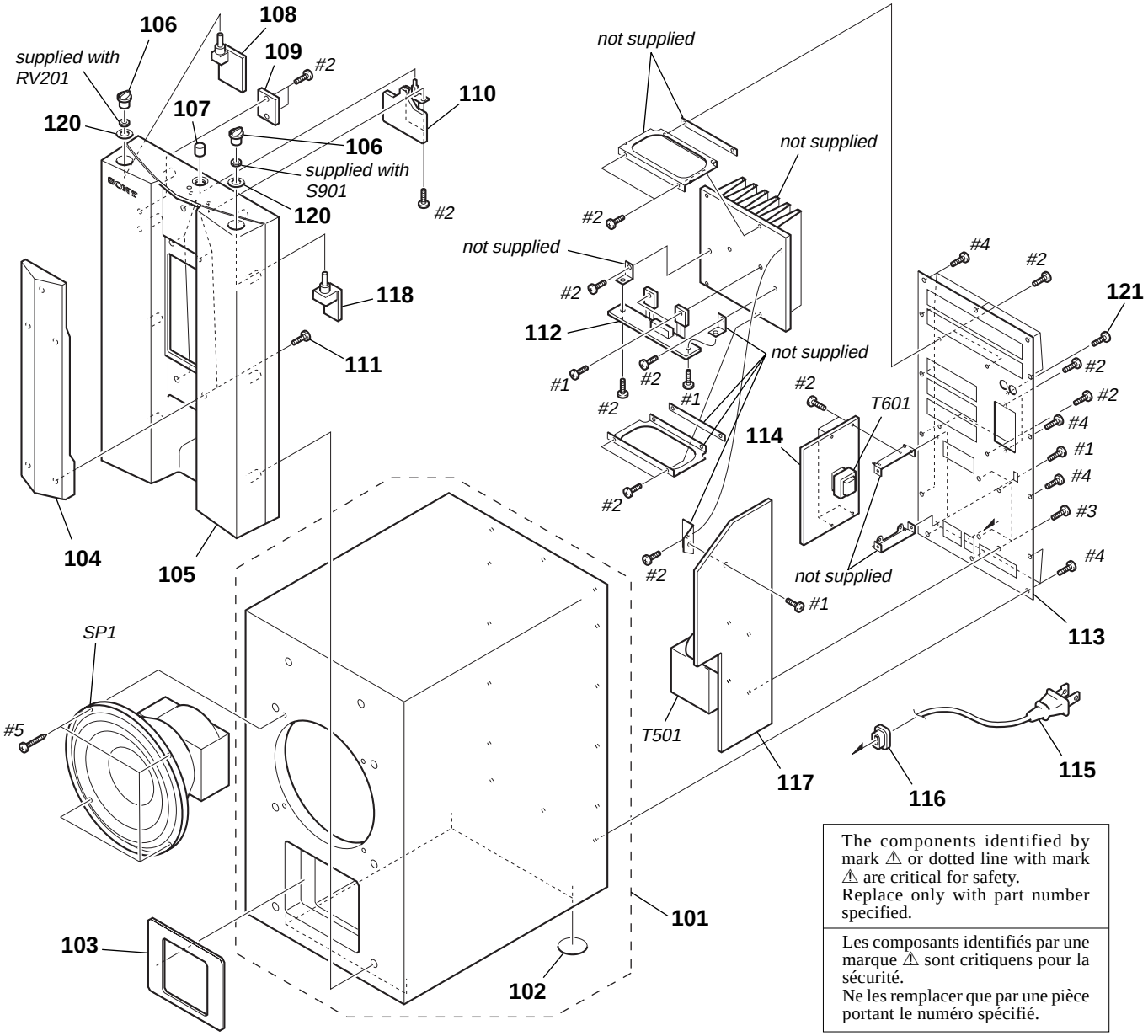
Ref. No.	Part No.	Description	Remark
1	X-4953-441-1	FRAME (SR) ASSY, GRILLE	
2	4-232-301-12	SCREW (3.5X75) +P, TAPPING	
3	4-232-302-01	CATCHER, GRILLE	
4	4-232-298-01	BOARD (SR), BAFFLE	
5	X-4953-440-1	CABINET (SR) ASSY	
6	1-694-516-21	TERMINAL, SPEAKER	
7	4-986-971-11	SCREW (3.5)	
8	1-823-042-11	CORD (WITH C) (US, CND, AEP, UK)	
9	1-761-413-11	MOUNTED PC BOARD (NETWORK) (AR, AUS, CH, MX, SP)	
SP2	1-529-974-11	SPEAKER (5.5X11cm)	

2-2. SS-CN325



Ref. No.	Part No.	Description	Remark
51	X-4953-443-1	FRAME (CN) ASSY, GRILLE	
52	4-232-301-12	SCREW (3.5X75) +P, TAPPING	
53	4-232-302-01	CATCHER, GRILLE	
55	4-232-305-01	BOARD (CN), BAFFLE	
56	4-986-971-11	SCREW (3.5)	
57	1-694-516-21	TERMINAL, SPEAKER	
58	X-4953-442-1	CABINET (CN) ASSY, SPEAKER	
SP3	1-529-975-11	SPEAKER (5.5X11cm)	
SP4	1-529-975-11	SPEAKER (5.5X11cm)	

2-3. SA-WMS325



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
101	A-2004-953-B	CABINET ASSY, SPEAKER (SP)	
101	A-4412-694-A	CABINET ASSY, SPEAKER (EXCEPT SP, CH)	
101	A-4735-290-B	CABINET ASSY, SPEAKER (CH)	
102	4-981-864-01	FOOT	
103	4-232-294-01	PACKING (D)	
104	X-4953-439-1	FRAME ASSY, GRILLE	
105	A-4735-291-A	PANEL ASSY, FRONT (CH)	
105	X-4953-438-1	PANEL ASSY, FRONT (EXCEPT CH)	
106	4-229-516-11	KNOB (VOL)	
107	4-232-295-01	BUTTON, PUSH	
108	1-680-778-11	CONTROL BOARD	
109	1-680-781-11	CONNECTOR BOARD	
110	1-680-780-11	POWER SWITCH BOARD	
111	4-986-971-11	SCREW (3.5)	
112	1-680-779-11	POWER BOARD	
113	4-232-955-11	PANEL, REAR (US, MX)	
113	4-232-955-21	PANEL, REAR (CND)	
113	4-232-955-31	PANEL, REAR (VE325: AEP, UK, AUS)	
113	4-232-955-41	PANEL, REAR (SP, AR)	
113	4-232-955-51	PANEL, REAR (VE322)	
113	4-232-955-72	PANEL, REAR (CH)	

Ref. No.	Part No.	Description	Remark
114	1-680-783-11	AUTO POWER BOARD	
⚠115	1-696-845-31	CORD, POWER (AUS)	
⚠115	1-777-071-21	CORD, POWER (AEP, UK, SP)	
⚠115	1-782-464-41	CORD, POWER (CH)	
⚠115	1-783-941-22	CORD, POWER (AR)	
⚠115	1-783-820-11	CORD, POWER (US, CND, MX)	
* 116	3-703-244-00	BUSHING (2104), CORD	
117	A-4726-985-A	MAIN BOARD, COMPLETE (EXCEPT US, CND, MX)	
117	A-4476-401-A	MAIN BOARD, COMPLETE (US, CND, MX)	
118	1-680-782-11	MODE BOARD	
120	4-227-298-01	SHEET	
121	3-710-901-11	SCREW, TAPPING	
SP1	1-529-593-21	SPEAKER (16cm)	
⚠T501	1-435-335-21	TRANSFORMER, POWER (US, CND, MX)	
⚠T501	1-435-883-11	TRANSFORMER, POWER (SP)	
⚠T501	1-435-891-11	TRANSFORMER, POWER (AEP, UK, AUS, CH, AR)	
⚠T601	1-435-993-11	TRANSFORMER, POWER (US, CND, MX)	
⚠T601	1-435-994-11	TRANSFORMER, POWER (AEP, UK, AUS, CH, AR)	
⚠T601	1-435-995-11	TRANSFORMER, POWER (SP)	

SECTION 3
ELECTRICAL PARTS LIST

AUTO POWER **CONNECTOR** **CONTROL**

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Abbreviation
  AR : Argentina model AUS : Australian model MX : Mexican model
  CND : Canadian model CH : Chinese model SP : Singapore model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description				Remark
	1-680-783-11	AUTO POWER BOARD				
		**********				
	1-533-293-11	FUSE HOLDER				
		< CAPACITOR >				
⚠C2	1-113-925-11	CERAMIC	0.01uF	20%	250V	(EXCEPT SP)
⚠C2	1-113-924-11	CERAMIC	0.0047uF	20%	250V	(SP)
⚠C3	1-113-925-11	CERAMIC	0.01uF	20%	250V	(EXCEPT SP)
⚠C3	1-113-924-11	CERAMIC	0.0047uF	20%	250V	(SP)
⚠C4	1-113-925-11	CERAMIC	0.01uF	20%	250V	(EXCEPT SP)
⚠C4	1-113-924-11	CERAMIC	0.0047uF	20%	250V	(SP)
⚠C5	1-113-924-11	CERAMIC	0.0047uF	20%	250V	
C602	1-104-666-11	ELECT	220uF	20%	25V	
C603	1-126-964-11	ELECT	10uF	20%	50V	
C604	1-126-964-11	ELECT	10uF	20%	50V	
C605	1-126-964-11	ELECT	10uF	20%	50V	
C606	1-126-964-11	ELECT	10uF	20%	50V	
		< CONNECTOR >				
CN601	1-564-505-11	PLUG, CONNECTOR 2P				
CN602	1-564-505-11	PLUG, CONNECTOR 2P				
* CN604	1-564-104-00	PIN, CONNECTOR (B3P-VH) 3P				
CN605	1-564-507-11	PLUG, CONNECTOR 4P				
		< DIODE >				
D601	8-719-024-99	DIODE 11ES2-NTA2B				
D602	8-719-024-99	DIODE 11ES2-NTA2B				
D603	8-719-024-99	DIODE 11ES2-NTA2B				
D604	8-719-024-99	DIODE 11ES2-NTA2B				
D605	8-719-110-36	DIODE MTZJ-T-72-13B (EXCEPT SP)				
D605	8-719-068-42	DIODE HZ13BP-TK (SP)				
D606	8-719-110-36	DIODE MTZJ-T-72-13B (EXCEPT SP)				
D606	8-719-068-42	DIODE HZ13BP-TK (SP)				
D607	8-719-911-19	DIODE 1SS133T-72				
D608	8-719-911-19	DIODE 1SS133T-72				
		< FUSE >				
⚠F601	1-532-500-31	FUSE (T630mA/250V) (SP)				
⚠F601	1-532-501-31	FUSE (T800mAL/250V) (AEP, UK, AUS, CH, AR)				
⚠F601	1-533-296-11	FUSE (2A/125V) (US, CND, MX)				
⚠F602	1-532-502-31	FUSE (T1.25AL/250V) (SP)				
		< TRANSISTOR >				
Q601	8-729-119-78	TRANSISTOR 2SC1815Y-TPE2				
Q602	8-729-173-38	TRANSISTOR 2SA1015TP-Y				
		< RESISTOR >				
R601	1-247-843-11	CARBON	3.3K	5%	1/4W	
R602	1-247-843-11	CARBON	3.3K	5%	1/4W	
		< RELAY >				
⚠RY601	1-755-458-11	RELAY, POWER (EXCEPT SP)				
⚠RY602	1-755-458-11	RELAY, POWER (SP)				
		< SWITCH >				
⚠S601	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR) (SP)				
		< TRANSFORMER >				
⚠T601	1-435-993-11	TRANSFORMER, POWER (US, CND, MX)				
⚠T601	1-435-994-11	TRANSFORMER, POWER (AEP, UK, AUS, CH, AR)				
⚠T601	1-435-995-11	TRANSFORMER, POWER (SP)				
**********						
	1-680-781-11	CONNECTOR BOARD				
		**********				
		< CONNECTOR >				
CN202	1-564-509-11	PLUG, CONNECTOR 6P				
* CN203	1-564-508-11	PLUG, CONNECTOR 5P				
**********						
	1-680-778-11	CONTROL BOARD				
		**********				
		< CAPACITOR >				
C201	1-130-475-00	MYLAR	0.0022uF	5%	50V	
C202	1-126-964-11	ELECT	10uF	20%	50V	
C203	1-126-964-11	ELECT	10uF	20%	50V	
C204	1-126-964-11	ELECT	10uF	20%	50V	
C205	1-126-964-11	ELECT	10uF	20%	50V	

CONTROL **MAIN**

Ref. No.	Part No.	Description			Remark
C206	1-164-159-11	CERAMIC	0.1uF		50V
C207	1-164-159-11	CERAMIC	0.1uF		50V
		< IC >			
IC201	8-759-145-58	IC BA4558			
		< RESISTOR >			
R201	1-249-417-11	CARBON	1K	5%	1/4W
R202	1-249-429-11	CARBON	10K	5%	1/4W
R203	1-249-429-11	CARBON	10K	5%	1/4W
R204	1-249-429-11	CARBON	10K	5%	1/4W
R205	1-249-427-11	CARBON	6.8K	5%	1/4W
R206	1-247-807-31	CARBON	100	5%	1/4W
		< VARIABLE RESISTOR >			
RV201	1-225-826-11	RES, VAR, CARBON 20K (LEVEL)			
**********					
	A-4476-401-A	MAIN BOARD, COMPLETE (US, CND, MX)			
	A-4726-985-A	MAIN BOARD, COMPLETE (EXCEPT US, CND, MX)			
		**********			
		< CAPACITOR >			
C101	1-162-286-31	CERAMIC	220PF	10%	50V
C102	1-162-286-31	CERAMIC	220PF	10%	50V
C103	1-162-286-31	CERAMIC	220PF	10%	50V
C104	1-162-286-31	CERAMIC	220PF	10%	50V
C105	1-126-964-11	ELECT	10uF	20%	50V
C106	1-162-215-31	CERAMIC	47PF	5%	50V
C107	1-162-215-31	CERAMIC	47PF	5%	50V
C108	1-131-694-31	FILM	0.15uF	5%	50V
C109	1-131-689-31	FILM	0.056uF	5%	50V
C110	1-131-697-31	FILM	0.27uF	5%	50V
C111	1-131-696-11	FILM	0.22uF	5%	50V
C112	1-131-696-11	FILM	0.22uF	5%	50V
C113	1-131-696-11	FILM	0.22uF	5%	50V
C114	1-136-165-00	FILM	0.1uF	5%	50V
C115	1-131-696-11	FILM	0.22uF	5%	50V
C116	1-131-679-31	FILM	0.01uF	5%	50V
C117	1-131-679-31	FILM	0.01uF	5%	50V
C118	1-126-964-11	ELECT	10uF	20%	50V
C301	1-126-964-11	ELECT	10uF	20%	50V
C302	1-136-165-00	FILM	0.1uF	5%	50V
C303	1-126-964-11	ELECT	10uF	20%	50V
C304	1-162-282-31	CERAMIC	100PF	10%	50V
C305	1-101-002-00	CERAMIC	0.0022uF		50V
C306	1-102-230-00	CERAMIC	4PF	0.25PF	500V
C307	1-101-810-00	CERAMIC	100PF	5%	500V
C308	1-126-934-11	ELECT	220uF	20%	10V
C309	1-128-551-11	ELECT	22uF	20%	63V
C310	1-128-551-11	ELECT	22uF	20%	63V
C311	1-137-420-11	FILM	0.047uF	5%	100V
C315	1-126-934-11	ELECT	220uF	20%	10V
C316	1-128-581-11	ELECT	4.7uF	20%	63V
C317	1-126-948-11	ELECT	100uF	20%	35V
C501	1-130-955-00	FILM	0.01uF	5%	100V
C502	1-130-955-00	FILM	0.01uF	5%	100V

Ref. No.	Part No.	Description			Remark
C503	1-117-782-11	ELECT	6800uF	20%	63V
C504	1-117-782-11	ELECT	6800uF	20%	63V
C505	1-104-665-11	ELECT	100uF	20%	25V
C506	1-104-665-11	ELECT	100uF	20%	25V
C507	1-136-165-00	FILM	0.1uF	5%	50V
C508	1-136-165-00	FILM	0.1uF	5%	50V
C509	1-126-964-11	ELECT	10uF	20%	50V
C510	1-126-964-11	ELECT	10uF	20%	50V
C511	1-136-165-00	FILM	0.1uF	5%	50V
C512	1-136-165-00	FILM	0.1uF	5%	50V
C601	1-104-666-11	ELECT	220uF	20%	25V
C701	1-104-661-91	ELECT	330uF	20%	16V
		< CONNECTOR >			
CN101	1-564-509-11	PLUG, CONNECTOR 6P			
* CN301	1-564-243-11	PIN, CONNECTOR 6P			
* CN302	1-565-792-11	PIN, CONNECTOR 2P			
* CN501	1-564-687-11	PIN, CONNECTOR 3P			
CN502	1-564-507-11	PLUG, CONNECTOR 4P			
CN701	1-564-506-11	PLUG, CONNECTOR 3P			
		< DIODE >			
D101	8-719-911-19	DIODE 1SS133T-72			
D102	8-719-911-19	DIODE 1SS133T-72			
D103	8-719-911-19	DIODE 1SS133T-72			
D104	8-719-911-19	DIODE 1SS133T-72			
D301	8-719-911-19	DIODE 1SS133T-72			
D302	8-719-911-19	DIODE 1SS133T-72			
D303	8-719-911-19	DIODE 1SS133T-72			
D304	8-719-911-19	DIODE 1SS133T-72			
D305	8-719-911-19	DIODE 1SS133T-72			
D306	8-719-911-19	DIODE 1SS133T-72			
D501	8-719-312-47	DIODE RBV-402			
D502	8-719-947-61	DIODE MTZJ-T-72-15B			
D503	8-719-947-61	DIODE MTZJ-T-72-15B			
D701	8-719-911-19	DIODE 1SS133T-72			
D702	8-719-911-19	DIODE 1SS133T-72			
D703	8-719-911-19	DIODE 1SS133T-72			
D704	8-719-911-19	DIODE 1SS133T-72			
		< IC >			
IC101	8-759-145-58	IC BA4558			
IC102	8-759-145-58	IC BA4558			
IC103	8-759-145-58	IC BA4558			
IC104	8-759-145-58	IC BA4558			
IC701	8-759-145-58	IC BA4558			
		< JACK >			
J101	1-785-795-11	JACK, PIN 2P (LINE IN/OUT)			
		< TRANSISTOR >			
Q101	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q102	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q103	8-729-029-40	TRANSISTOR	DTA124ESA-TP		
Q104	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q301	8-729-119-77	TRANSISTOR	2SA1175TP-FEK		

MAIN

Ref. No.	Part No.	Description			Remark
Q302	8-729-035-30	TRANSISTOR	2SA1174TP-PFE		
Q303	8-729-035-30	TRANSISTOR	2SA1174TP-PFE		
Q304	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q305	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q306	8-729-214-52	TRANSISTOR	2SA1145-Y		
Q307	8-729-270-52	TRANSISTOR	2SC2705-Y		
Q308	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q309	8-729-178-42	TRANSISTOR	2SC2784-EFP-TP		
Q310	8-729-119-78	TRANSISTOR	2SC2785TP-HFE		
Q311	8-729-029-86	TRANSISTOR	DTC124ESA-TP		
Q701	8-729-029-86	TRANSISTOR	DTC124ESA-TP		
Q702	8-729-119-77	TRANSISTOR	2SA1175TP-FEK		
Q703	8-729-029-86	TRANSISTOR	DTC124ESA-TP		
Q704	8-729-029-40	TRANSISTOR	DTA124ESA-TP		
Q705	8-729-029-40	TRANSISTOR	DTA124ESA-TP		
		< RESISTOR >			
R101	1-249-425-11	CARBON	4.7K	5% 1/4W	
R102	1-249-425-11	CARBON	4.7K	5% 1/4W	
R103	1-249-437-11	CARBON	47K	5% 1/4W	
R104	1-249-437-11	CARBON	47K	5% 1/4W	
R105	1-249-429-11	CARBON	10K	5% 1/4W	
R106	1-249-429-11	CARBON	10K	5% 1/4W	
R107	1-249-429-11	CARBON	10K	5% 1/4W	
R108	1-249-429-11	CARBON	10K	5% 1/4W	
R109	1-249-417-11	CARBON	1K	5% 1/4W	
R110	1-249-417-11	CARBON	1K	5% 1/4W	
R111	1-249-429-11	CARBON	10K	5% 1/4W	
R112	1-249-417-11	CARBON	1K	5% 1/4W	
R113	1-249-417-11	CARBON	1K	5% 1/4W	
R114	1-249-441-11	CARBON	100K	5% 1/4W	
R115	1-249-441-11	CARBON	100K	5% 1/4W	
R116	1-249-429-11	CARBON	10K	5% 1/4W	
R117	1-249-429-11	CARBON	10K	5% 1/4W	
R118	1-249-429-11	CARBON	10K	5% 1/4W	
R119	1-247-843-11	CARBON	3.3K	5% 1/4W	
R120	1-249-424-11	CARBON	3.9K	5% 1/4W	
R121	1-249-436-11	CARBON	39K	5% 1/4W	
R122	1-249-417-11	CARBON	1K	5% 1/4W	
R123	1-249-435-11	CARBON	33K	5% 1/4W	
R124	1-249-426-11	CARBON	5.6K	5% 1/4W	
R125	1-249-425-11	CARBON	4.7K	5% 1/4W	
R126	1-249-440-11	CARBON	82K	5% 1/4W	
R127	1-249-417-11	CARBON	1K	5% 1/4W	
R128	1-249-435-11	CARBON	33K	5% 1/4W	
R129	1-249-435-11	CARBON	33K	5% 1/4W	
R130	1-249-440-11	CARBON	82K	5% 1/4W	
R131	1-249-424-11	CARBON	3.9K	5% 1/4W	
R132	1-249-432-11	CARBON	18K	5% 1/4W	
R133	1-249-427-11	CARBON	6.8K	5% 1/4W	
R134	1-249-427-11	CARBON	6.8K	5% 1/4W	
R135	1-247-807-31	CARBON	100	5% 1/4W	
R136	1-249-431-11	CARBON	15K	5% 1/4W	
R137	1-249-433-11	CARBON	22K	5% 1/4W	
R138	1-249-435-11	CARBON	33K	5% 1/4W	
R139	1-249-421-11	CARBON	2.2K	5% 1/4W	
R140	1-249-421-11	CARBON	2.2K	5% 1/4W	
R141	1-247-897-11	CARBON	560K	5% 1/4W	

Ref. No.	Part No.	Description			Remark
R301	1-249-427-11	CARBON	6.8K	5% 1/4W	
R302	1-249-441-11	CARBON	100K	5% 1/4W	
R303	1-249-403-11	CARBON	68	5% 1/4W	
R305	1-249-438-11	CARBON	56K	5% 1/4W	
R306	1-249-411-11	CARBON	330	5% 1/4W	
R307	1-249-431-11	CARBON	15K	5% 1/4W	
R308	1-249-408-11	CARBON	180	5% 1/4W	
⚠R309	1-249-408-11	CARBON	180	5% 1/4W	F
⚠R310	1-249-408-11	CARBON	180	5% 1/4W	F
R311	1-249-429-11	CARBON	10K	5% 1/4W	
R312	1-249-433-11	CARBON	22K	5% 1/4W	
R313	1-249-407-11	CARBON	150	5% 1/4W	
⚠R314	1-249-401-11	CARBON	47	5% 1/4W	F
R315	1-249-438-11	CARBON	56K	5% 1/4W	
R316	1-249-416-11	CARBON	820	5% 1/4W	
⚠R317	1-249-393-11	CARBON	10	5% 1/4W	F
⚠R318	1-249-393-11	CARBON	10	5% 1/4W	F
⚠R319	1-249-393-11	CARBON	10	5% 1/4W	F
R335	1-249-433-11	CARBON	22K	5% 1/4W	
R336	1-249-430-11	CARBON	12K	5% 1/4W	
R337	1-249-438-11	CARBON	56K	5% 1/4W	
R338	1-249-441-11	CARBON	100K	5% 1/4W	
R339	1-249-441-11	CARBON	100K	5% 1/4W	
R340	1-249-433-11	CARBON	22K	5% 1/4W	
⚠R341	1-216-433-00	METAL OXIDE	1.2K	5% 1W	F
				(EXCEPT US, CND, MX)	
⚠R341	1-215-870-11	METAL OXIDE	1.5K	5% 1W	F
				(US, CND, MX)	
⚠R501	1-215-894-11	METAL OXIDE	2.2K	5% 2W	F
⚠R502	1-215-894-11	METAL OXIDE	2.2K	5% 2W	F
R701	1-249-441-11	CARBON	100K	5% 1/4W	
R702	1-249-417-11	CARBON	1K	5% 1/4W	
R703	1-249-430-11	CARBON	12K	5% 1/4W	
R704	1-249-429-11	CARBON	10K	5% 1/4W	
R705	1-249-429-11	CARBON	10K	5% 1/4W	
R706	1-249-441-11	CARBON	100K	5% 1/4W	
R707	1-247-903-00	CARBON	1M	5% 1/4W	
R708	1-249-416-11	CARBON	820	5% 1/4W	
R709	1-249-421-11	CARBON	2.2K	5% 1/4W	
R710	1-249-419-11	CARBON	1.5K	5% 1/4W	
R711	1-249-429-11	CARBON	10K	5% 1/4W	
		< RELAY >			
RY301	1-515-920-11	RELAY (24V)			
		< SWITCH >			
S701	1-571-588-21	SWITCH, SLIDE (POWER SAVE)			
		< TRANSFORMER >			
⚠T501	1-435-335-21	TRANSFORMER, POWER (US, CND, MX)			
⚠T501	1-435-883-11	TRANSFORMER, POWER (SP)			
⚠T501	1-435-891-11	TRANSFORMER, POWER			
				(AEP, UK, AUS, CH, AR)	
		< TERMINAL >			
TM101	1-537-922-11	TERMINAL BOARD (SP) (SPEAKER IN/OUT)			

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The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

MODE | **POWER** | **POWER SWITCH**

Ref. No.	Part No.	Description				Remark
	1-680-782-11	MODE BOARD				
		**********				
		< SWITCH >				
S901	1-786-081-12	SWITCH, ROTARY (MODE)				
**********						
	1-680-779-11	POWER BOARD				
		**********				
		< CAPACITOR >				
C401	1-126-947-11	ELECT	47uF	20%	25V	
		< CONNECTOR >				
* CN401	1-564-243-11	PIN, CONNECTOR 6P				
		< TRANSISTOR >				
Q401	8-729-141-30	TRANSISTOR	2SC3623ATP-LK			
Q402	8-729-119-77	TRANSISTOR	2SA1175TP-FEK			
Q403	8-749-010-25	TRANSISTOR	MN2488-OPY-M			
Q404	8-749-010-26	TRANSISTOR	MP1620-OPY-M			
		< RESISTOR >				
R401	1-249-437-11	CARBON	47K	5%	1/4W	
R402	1-249-421-11	CARBON	2.2K	5%	1/4W	
R403	1-249-414-11	CARBON	560	5%	1/4W	
⚠R404	1-249-408-11	CARBON	180	5%	1/4W	F
⚠R405	1-249-408-11	CARBON	180	5%	1/4W	F
⚠R406	1-217-151-00	METAL	0.22	10%	2W	F
⚠R407	1-217-151-00	METAL	0.22	10%	2W	F
**********						
	1-680-780-11	POWER SWITCH BOARD				
		**********				
		< CAPACITOR >				
⚠C1	1-113-924-11	CERAMIC	0.0047uF	20%	250V	
		< CONNECTOR >				
* CN1	1-695-044-11	PIN, CONNECTOR 2P				
CN801	1-564-506-11	PLUG, CONNECTOR 3P				
		< DIODE >				
D801	8-719-056-10	LED SML72420C-TP15 (ON/STANDBY)				
		< SWITCH >				
⚠S1	1-554-920-61	SWITCH, PUSH (AC POWER) (1 KEY)				(POWER)
**********						
		MISCELLANEOUS				
		**********				
6	1-694-516-21	TERMINAL, SPEAKER				
8	1-823-042-11	CORD (WITH C) (US, CND, AEP, UK)				
9	1-761-413-11	MOUNTED PC BOARD (NETWORK)				(AR, AUS, CH, MX, SP)
57	1-694-516-21	TERMINAL, SPEAKER				
⚠115	1-696-845-31	CORD, POWER (AUS)				

Ref. No.	Part No.	Description	Remark
⚠115	1-777-071-21	CORD, POWER (AEP, UK, SP)	
⚠115	1-782-464-41	CORD, POWER (CH)	
⚠115	1-783-820-11	CORD, POWER (US, CND, MX)	
⚠115	1-783-941-22	CORD, POWER (AR)	
SP1	1-529-593-21	SPEAKER (16cm)	
SP2	1-529-974-11	SPEAKER (5.5X11cm)	
SP3	1-529-975-11	SPEAKER (5.5X11cm)	
SP4	1-529-975-11	SPEAKER (5.5X11cm)	
⚠T501	1-435-335-21	TRANSFORMER, POWER (US, CND, MX)	
⚠T501	1-435-883-11	TRANSFORMER, POWER (SP)	
⚠T501	1-435-891-11	TRANSFORMER, POWER	(AEP, UK, AUS, CH, AR)
⚠T601	1-435-993-11	TRANSFORMER, POWER (US, CND, MX)	
⚠T601	1-435-994-11	TRANSFORMER, POWER	(AEP, UK, AUS, CH, AR)
⚠T601	1-435-995-11	TRANSFORMER, POWER (SP)	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-647-79	SCREW +P 3X10 TYPE2 NON-SLIT	
#2	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S	
#3	7-685-660-19	SCREW +BVTP 4X10 TYPE2 N-S	
#4	7-685-663-79	SCREW +BVTP 4X16 TYPE2 N-S	
#5	7-685-664-79	SCREW +P 4X20 TYPE1	
#6	7-688-004-12	W4, MIDDLE	
**********			
		ACCESSORIES	
		**********	
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P (VE325: SP)	
	1-769-329-21	CORD, CONNECTION (PIN-PIN) (VE322)	
	1-769-329-21	CORD, CONNECTION (PIN-PIN) (VE325)	
	1-769-433-11	CORD, SPEAKER (10m) (VE325)	
	1-769-433-21	CORD, SPEAKER (2.5m)	
	1-769-433-61	CORD, SPEAKER (3.5m)	
⚠	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P	(WMS325: UK)
	4-233-075-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH)	(VE322: UK/VE325: US, CND, UK)
	4-233-075-21	MANUAL, INSTRUCTION	(ENGLISH, FRENCH, GERMAN, ITALIAN) (VE322: AEP/VE325: AEP)
	4-233-075-31	MANUAL, INSTRUCTION	(DUTCH, SPANISH, SWEDISH, POLISH) (VE322: AEP/VE325: AEP)
	4-233-075-41	MANUAL, INSTRUCTION	(PORTUGUESE, DANISH, FINNISH, RUSSIAN) (VE322: AEP/VE325: AEP)
	4-233-075-51	MANUAL, INSTRUCTION (ENGLISH, FRENCH,	SPANISH, TRADITIONAL CHINESE) (VE325: SP, AR, AUS, CH)
	4-233-075-61	MANUAL, INSTRUCTION	(SPANISH) (VE325: MX)
	4-233-075-71	MANUAL, INSTRUCTION	(ENGLISH, SIMPLIFIED CHINESE) (VE325: CH)
	4-235-133-01	FOOT (VE325: US, CND, AEP, UK, MX)	
	4-235-867-01	FOOT (VE322)	
	4-972-322-01	FOOT (Y) (VE325: AR, AUS, CH, SP)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REVISION HISTORY

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Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001.02	New
1.1	2001.07	Addition of Australian and Chinese models
1.2	2002.07	Addition of Ref. No. 8 and Ref. No. 9 (SPM-02053)